FIGURE 1

FIGURE 2

FIGURE 3

FIG. 4

FIG. 5A

```
        ┌─────────────────────────────────┐
        │  AN OPERATOR ENTERS             │
        │  A GIVEN TRACE CODE            │
        │  AT A LOCAL ELEMENT           │
        │  MANAGER                       │
        └─────────────────────────────────┘
                      │
                      ▼
        ┌─────────────────────────────────┐
        │  THE LOCAL ELEMENT MANAGER      │
        │  ISSUES THE GIVEN TRACE CODE    │
        │  TO REMOTE ELEMENT MANAGERS     │
        └─────────────────────────────────┘
                      │
                      ▼
        ┌─────────────────────────────────┐
        │  THE LOCAL AND REMOTE ELEMENT   │
        │  MANAGERS ISSUE THE GIVEN TRACE │
        │  CODE TO RESPECTIVE LOCAL AND   │
        │  REMOTE PROBES (I.E., THE       │
        │  PROBES ARE "ARMED")            │
        └─────────────────────────────────┘
                      │
                      ▼
        ┌─────────────────────────────────┐
        │  THE LOCAL AND REMOTE PROBES    │
        │  MONITOR RESPECTIVE LINK SETS   │
        │  FOR IAM MESSAGE(S) HAVING THE  │
        │  GIVEN TRACE CODE               │
        └─────────────────────────────────┘
                      │
                      ▼
              ╱────────────────╲
             ╱  HAS THE IAM     ╲   Timeout
            ╱  SIGNAL WITH       ╲───────────▶ ( C )
            ╲  THE GIVEN TRACE   ╱            (Fig. 5C)
             ╲  CODE BEEN       ╱
              ╲  DETECTED ?    ╱
                ╲────────────╱
              NO │        │ YES
                 │        ▼
                 │      ( A )
                 │    (Fig. 5B)
           (loops back)
```

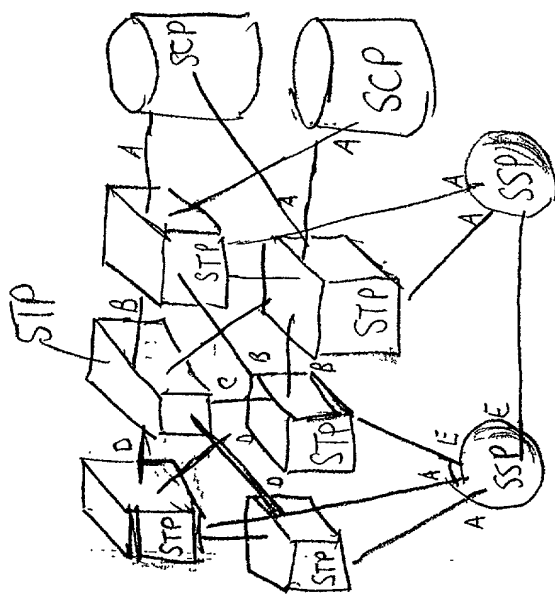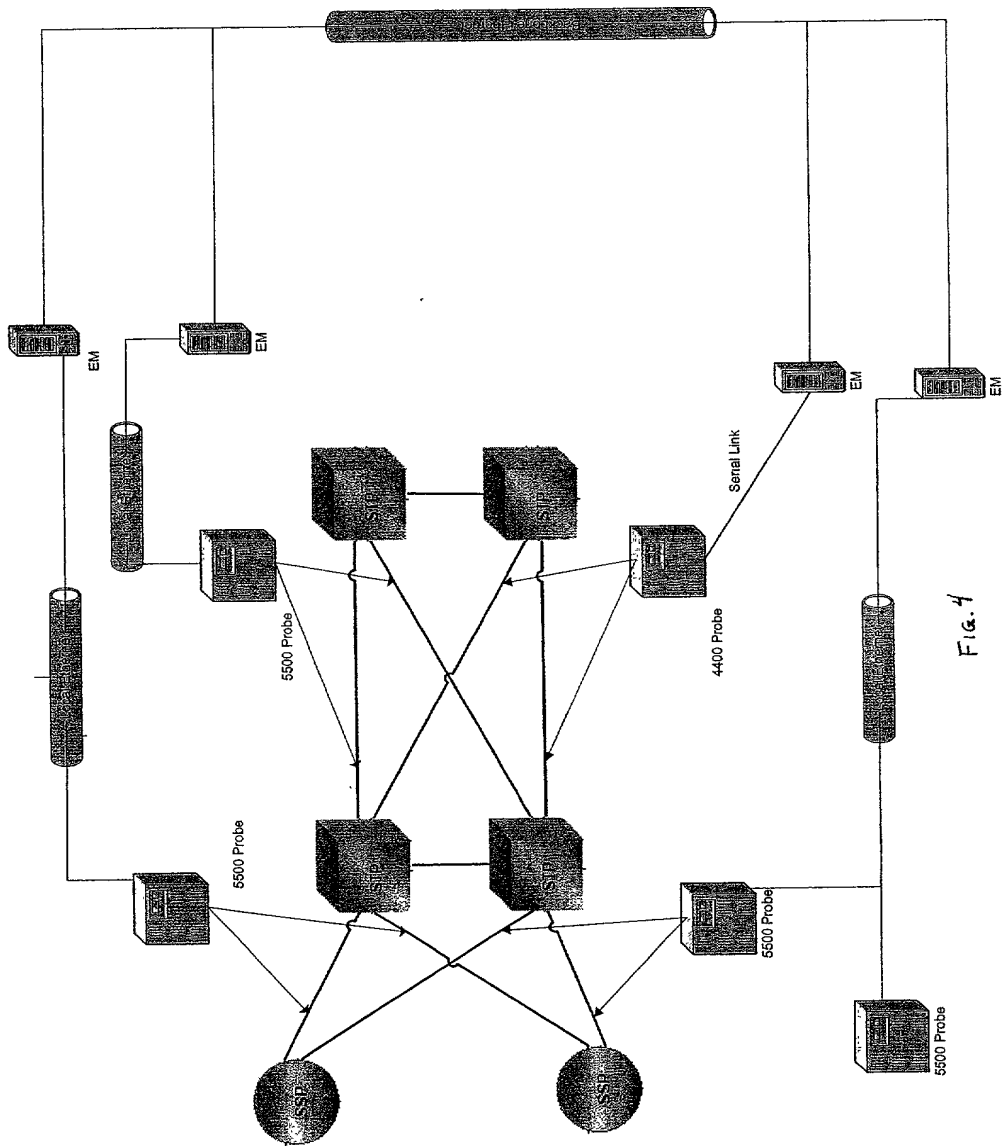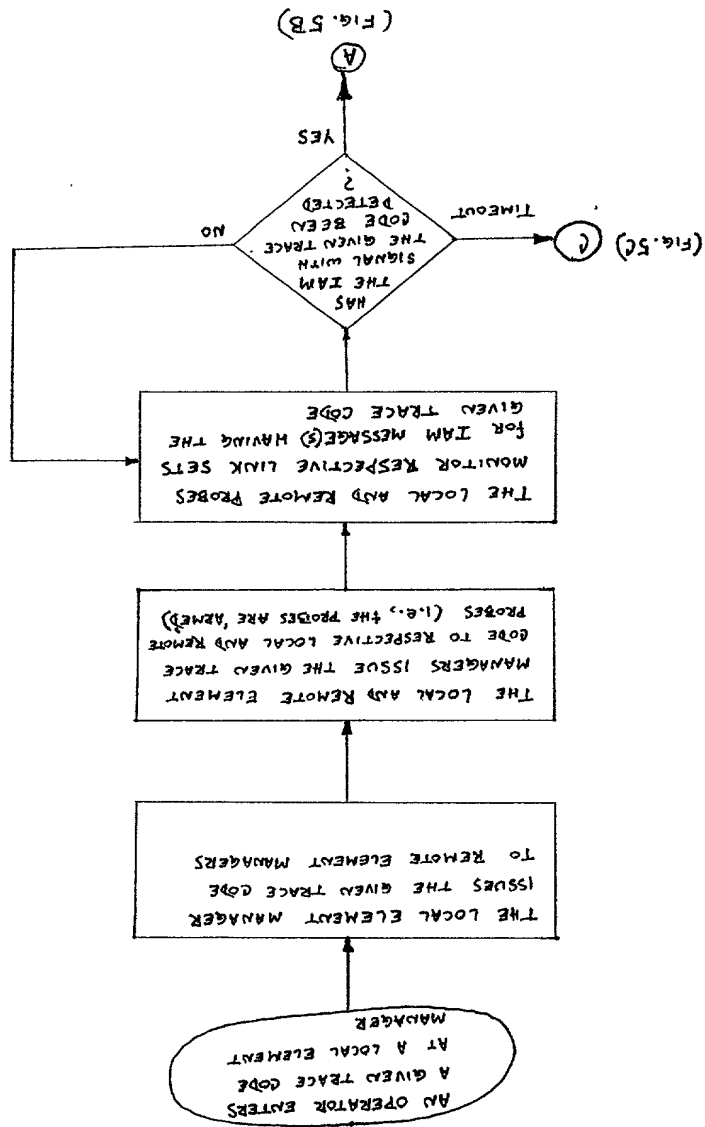(A) (FROM FIG. 5A)

THE PROBE THAT DETECTS THE
IAM MESSAGE, HAVING THE GIVEN
TRACE CODE, ISSUES A TRIGGER
TO A RESPECTIVE ELEMENT MANAGER.
THE PROBE TIME STAMPS THE TRIGGER.

THE RESPECTIVE ELEMENT MANAGER
RECEIVES THE TRIGGER WITH THE
TIME STAMP FROM THE DETECTING PROBE

THE RESPECTIVE ELEMENT MANAGER
BROADCASTS THE TRIGGER WITH THE
TIMESTAMP TO THE LOCAL AND
REMOTE ELEMENT MANAGERS

THE LOCAL AND REMOTE ELEMENT MANAGERS,
IN TURN, BROADCAST THE TRIGGER
WITH THE TIMESTAMP TO RESPECTIVE
PROBES

ALL PROBES MONITORING THE COMBINED
LINK SETS SCAN MESSAGES IN
RESPECTIVE 2 SECOND BUFFERS FOR SIGNALING
MESSAGES (i) HAVING OPC, DPC, OR CIC
CODES CORRESPONDING TO THE TRACE
CODE, AND (ii) HAVING RESPECTIVE
TIMESTAMPS FALLING WITHIN A 100msec
WINDOW OF TIME FOLLOWING THE
TRIGGER TIMESTAMP

(B) (FIG. 5C)

FIG. 5B

EXAMPLE of SIGNALING MESSAGE:

ISUP MESSAGE
≡ ISDN USER PART
MESSAGE USED TO SET-UP,
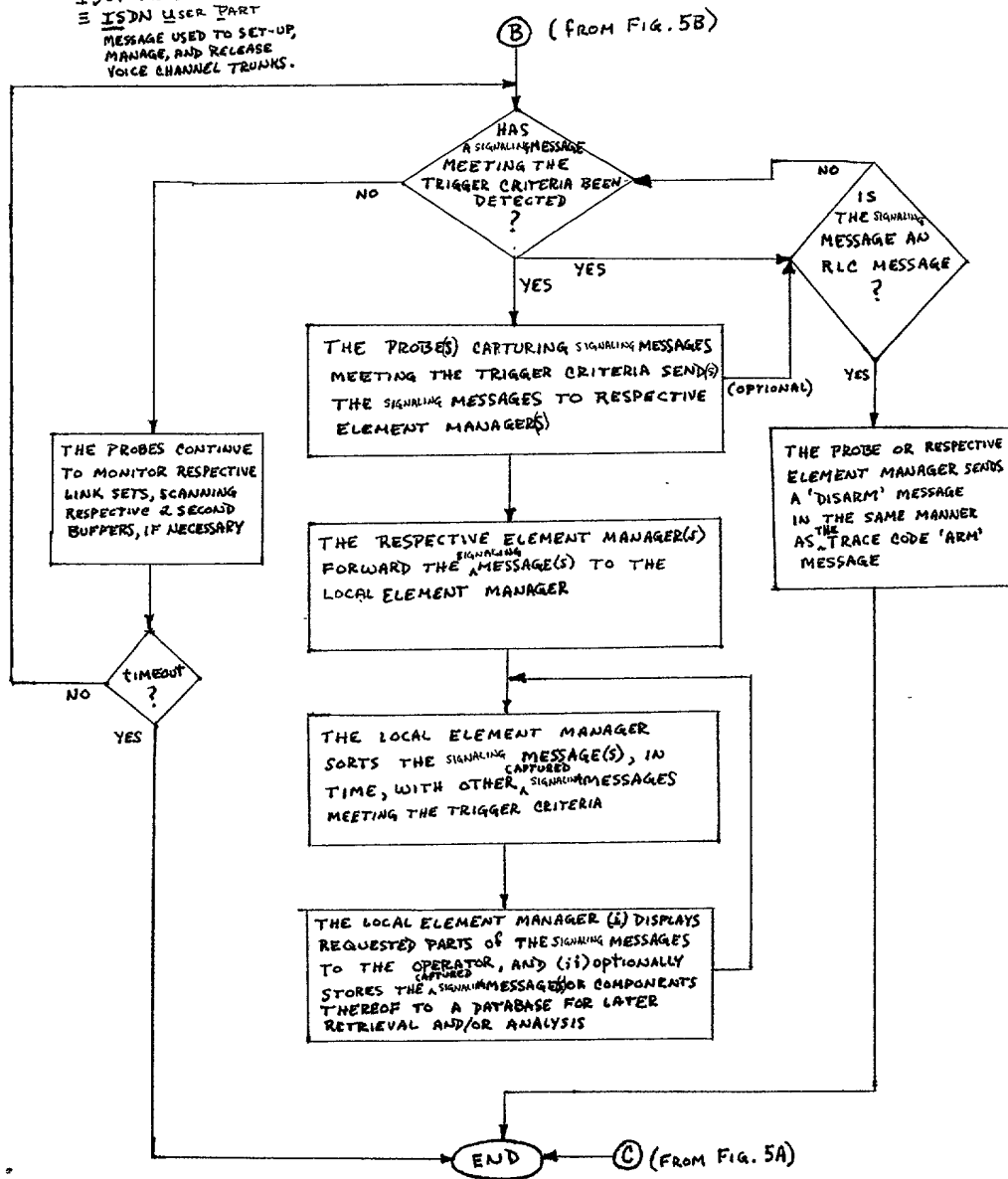MANAGE, AND RELEASE
VOICE CHANNEL TRUNKS.

B (FROM FIG. 5B)

HAS A SIGNALING MESSAGE MEETING THE TRIGGER CRITERIA BEEN DETECTED ?

NO

YES

YES

IS THE SIGNALING MESSAGE AN RLC MESSAGE ?

NO

YES

THE PROBE(S) CAPTURING SIGNALING MESSAGES MEETING THE TRIGGER CRITERIA SEND(S) THE SIGNALING MESSAGES TO RESPECTIVE ELEMENT MANAGER(S)

(OPTIONAL)

THE PROBES CONTINUE TO MONITOR RESPECTIVE LINK SETS, SCANNING RESPECTIVE & SECOND BUFFERS, IF NECESSARY

THE PROBE OR RESPECTIVE ELEMENT MANAGER SENDS A 'DISARM' MESSAGE IN THE SAME MANNER AS THE TRACE CODE 'ARM' MESSAGE

THE RESPECTIVE ELEMENT MANAGER(S) FORWARD THE SIGNALING MESSAGE(S) TO THE LOCAL ELEMENT MANAGER

timeout ?

NO

YES

THE LOCAL ELEMENT MANAGER SORTS THE SIGNALING MESSAGE(S), IN TIME, WITH OTHER CAPTURED SIGNALING MESSAGES MEETING THE TRIGGER CRITERIA

THE LOCAL ELEMENT MANAGER (i) DISPLAYS REQUESTED PARTS OF THE SIGNALING MESSAGES TO THE OPERATOR, AND (ii) OPTIONALLY STORES THE CAPTURED SIGNALING MESSAGE(S) OR COMPONENTS THEREOF TO A DATABASE FOR LATER RETRIEVAL AND/OR ANALYSIS

END

C (FROM FIG. 5A)

FIG. 5C